

We claim:

1. A method for managing a defect table stored on a recording medium of a mass storage device, the method comprising steps of:
  - 5 (a) obtaining the defect table from the recording medium of the mass storage device, wherein the defect table is partitioned into a plurality of segments that are physically distributed throughout the recording medium; and
  - (b) copying at least one of the plurality segments of the defect table into a volatile storage medium, the volatile storage medium being operably coupled to a microcontroller of the mass storage device.
- 10 2. The method of claim 1, wherein the obtaining step (a) further comprises the step of:
  - (a)(1) reading the defect table from the recording medium of the mass storage device.
- 15 3. The method of claim 1, wherein the copying step (b) further comprises the steps of:
  - (b)(1) determining at least one of the plurality of segments of the defect table that are associated with the most recently used plurality of data regions of the mass storage device; and
  - (b)(2) copying at least one of the plurality of segments into a volatile storage medium, the volatile storage medium being operably coupled to a microcontroller of the mass storage device.
- 20 4. The method of claim 1, wherein the copying step (b) further comprises the steps of:
  - (b)(1) determining that a size of a segment is not greater than a predetermined size of a defect buffer in a volatile storage medium;

(b)(2) determining that the predetermined size of the defect table is greater than the predetermined size of a defect buffer in the volatile storage medium; and

(b)(3) copying the segment into the defect buffer in the volatile storage medium.

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5. The method of claim 1, wherein the volatile storage medium further comprises a plurality of segments and the method further comprises the steps of:

(c) obtaining an application of the mass storage device; and

(d) adapting a quantity of the plurality of segments to the application.

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6. The method of claim 5, wherein the application further comprises a multimedia application and the adapting step (d) further comprises the steps of:

(d)(1) obtaining a quantity of simultaneous multimedia streams; and

(d)(2) setting the quantity of the plurality of segments in reference to the quantity of simultaneous multimedia streams.

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7. The method of claim 1, wherein the volatile storage medium further comprises a plurality of segments and the method further comprises the steps of:

(c) obtaining a quantity of defects found during a manufacturing test process of the mass storage device; and

(d) adapting a quantity of the plurality of segments to the quantity of defects.

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8. The method of claim 7, wherein the adapting step (d) further comprises:

(d)(1) obtaining a quantity of available memory for storing the defect table; and

(d)(2) determining a quantity of the plurality of segments from the quantity of defects divided by the quantity of available memory.

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9. The method of claim 1, wherein the mass storage device further comprises a disc drive.

10. The method of claim 1, wherein the volatile storage medium further comprises a cache.

5 11. The method of claim 10, wherein the cache further comprises a cache selected from a group consisting of an associative cache, a first-in-first-out cache, a multilevel cache, a single level cache, a chained cache, and a linked list cache.

12. A disc drive, comprising:

10 a base;  
a disc rotatably attached to the base;  
an actuator for carrying a transducer head in a transducing relation with respect to  
the disc; and  
15 a disc drive controller, communicatively coupled to the actuator, which further  
includes:  
an obtainer of the defect table from the recording medium of the mass  
storage device, wherein the defect table is partitioned into a  
plurality of segments; and  
20 a transferor of one of the plurality of segments of the defect table into a  
defect buffer in a volatile memory device, the transferor being  
operably coupled to the obtainer.

13. The disk drive of claim 12, wherein the transferor further comprises:

25 a determiner of at least one of a plurality of segments of the defect table that are  
associated with a plurality of most-recently-used data regions of the  
recording medium of the mass storage device, the determiner being  
operably coupled to the defect table on the recording medium; and

a transferor of at least one of the plurality of the most-recently-used segments of the defect table into the volatile storage device, the transferor being operably coupled to the determiner, the defect table, and the defect buffer.

5 14. The disc drive of claim 12, wherein the transferor further comprises:  
a partition determiner, that determines that the defect table on the recording  
medium is partitioned into a quantity of one or more segments, the  
partition determiner being operably coupled to the recording medium;  
a defect table size determiner, that determines that the defect table on the  
recording medium is bigger than the defect table in the volatile memory  
device, the size determiner being operably coupled to the recording  
medium; and  
10 a segment transferor, that transfers the segment of the one or more segments of  
the defect table on the recording medium into the defect table in the  
volatile storage device, the segment transferor being operably coupled to  
the recording medium, the partition determiner, and the size determiner.

15 15. The disc drive of claim 14, wherein the one or more segments further comprise  
one or more segments that are physically distributed throughout the recording medium.

20 16. The disc drive of claim 12, wherein the defect buffer in the volatile storage  
medium is partitioned into a quantity of one or more segments, the apparatus further  
comprising:  
an obtainer of the application of the mass storage device, that obtains an  
indication of the type of application from a source; and  
25 an adapter, that adapts the quantity of the one or more segments of the defect  
buffer in the volatile memory device to the application, the adapter being  
operably coupled to the obtainer and the defect buffer.

17. The disc drive of claim 16, wherein the application further comprises a multimedia application, the adapter further comprising:

- an obtainer of the quantity of simultaneous multimedia streams; and
- a setter of the quantity of the one or more segments in reference to the quantity of simultaneous multimedia streams, the setter being operably coupled to the obtainer of the quantity of simultaneous multimedia streams.

18. The disc drive of claim 12, wherein the defect buffer in the volatile storage medium is partitioned into a quantity of one or more segments, the apparatus further comprising:

10 comprising:  
an obtainer of a quantity of defects found during a manufacturing test process of  
the mass storage device; and  
an adapter of the quantity of the one or more segments in the defect buffer to the  
quantity of defects, the adapter being operably coupled to the obtainer.

19. The disc drive of claim 12, wherein the volatile memory device further comprises a cache.

20. The disc drive of claim 12, wherein the mass storage device further comprises a disc drive.

21. An information handling system to manage one or more defects of a mass storage device comprising:

25 a recording medium, having a defect table that is partitioned into a plurality of segments;  
a processor, operably coupled to the recording medium;  
a volatile memory device operably coupled to the processor, having a defect buffer that is smaller than the defect table; and

1 a means operative on the processor for managing the defect table and the defect  
2 buffer.

3 22. The information handling system of claim 21, wherein the means further  
4 comprises:  
5 a transferor of at least one of the plurality of segments of the defect table into the  
6 defect buffer.

7 23. The information handling system of claim 22, wherein the transferor further  
8 comprises:  
9 a determiner of at least one of a plurality of segments of the defect table that are  
10 associated with a plurality of most-recently-used data regions of the  
11 recording medium of the mass storage device, the determiner being  
12 operably coupled to the defect table on the recording medium; and  
13 a transferor of at least one of the plurality of the most-recently-used segments of  
14 the defect table into the volatile storage device, the transferor being  
15 operably coupled to the determiner, the defect table, and the defect buffer.

16 24. The information handling system of claim 22, wherein the transferor further  
17 comprises:  
18 a partition determiner, that determines that the defect table on the recording  
19 medium is partitioned into a plurality of segments, the partition determiner  
20 being operably coupled to the recording medium;  
21 a defect table size determiner, that determines that the defect table on the  
22 recording medium is bigger than the defect table in the volatile memory  
23 device, the size determiner being operably coupled to the recording  
24 medium; and  
25 a segment transferor, that transfers the segment of the one or more segments of  
the defect table on the recording medium into the defect table in the

volatile storage device, the segment transferor being operably coupled to the recording medium, the partition determiner, and the size determiner.

25. The information handling system of claim 24, wherein the one or more segments  
5 further comprise one or more segments that are physically distributed throughout the recording medium.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100